



**SATURNA ISLAND LOCAL TRUST COMMITTEE
BUSINESS MEETING AGENDA
12:30 PM, THURSDAY, APRIL 18, 2013
AT THE SATURNA RECREATION AND CULTURAL CENTRE
104 HARRIS ROAD, SATURNA ISLAND, B.C.**

*Approximate time is provided for the convenience of the public only and is subject to change without notice.

	Page #	*Approx. Time*
1. CALL TO ORDER		12:30 pm
2. APPROVAL OF AGENDA		
Additions/Deletions		
2.1 Questions from public on Agenda Items		
3. COMMUNITY INFORMATION MEETING - none		
4. PUBLIC HEARING - none		
5. PREVIOUS MEETINGS		
5.1 Adopted Local Trust Committee Minutes - for information only (attached)		
5.1.1 Adopted Minutes of February 14, 2013 Local Trust Committee Business Meeting	1	
5.2 Public Hearing Records and Community Information Meeting Notes - for information only (attached)		
5.2.1 Received Notes of February 14, 2013 Community Information Meeting	10	
5.2.2 Received Record of February 14, 2013 Public Hearing	11	
5.3 Section 26 Resolutions-without-meeting (attached)	13	
5.4 Advisory Planning Commission - none		
6. BUSINESS ARISING FROM THE MINUTES		1:00 pm
6.1 Follow-up Action Report (attached)	14	
7. DELEGATIONS - none		

8.	CORRESPONDENCE none <i>[correspondence received concerning applications and/or projects is considered with the application]</i>	
9.	APPLICATIONS, PERMITS, BYLAWS AND REFERRALS - none	
10.	LOCAL TRUST COMMITTEE PROJECTS	
10.1	Ocean Loop Geo-exchange Bylaw No. 110 – for consideration of adoption (attached)	16
10.2	Work Program Priority Options (attached)	17
11.	REPORTS	1:30 pm
11.1	Work Program Reports – for information	
11.1.1	Saturna Island Local Trust Committee Work Program Report dated April 2013 (attached)	22
11.2	Applications Report – for information	
11.2.1	Saturna Island Applications Report dated April 2013 (attached)	24
11.3	Expense/Budget Reports	
11.3.1	Trustee and Local Expenses– for information (attached)	27
11.4	Bylaw Enforcement - none	
11.5	Policies and Standing Resolutions Report – for information (attached)	28
11.6	Saturna Island LTC Web Page – for information (attached)	30
11.7	Chair’s Report	
11.8	Trustee Report	
12.	OTHER BUSINESS	2:30 pm
12.1.	Next Business Meeting – June 6, 2013, Saturna Island Community Hall	
12.2	Annual Report (attached)	32
12.3	Renewable Energy Technologies in the Trust Area – Ocean Based Geo-Exchange Systems (attached)	33
12.4	Advertising LTC Meetings & Planner Office Hours in the Scribbler Newspaper	
13.	TOWN HALL MEETING	
14.	ADJOURNMENT	4:00 pm

ADOPTED

**MINUTES OF THE SATURNA ISLAND
LOCAL TRUST COMMITTEE BUSINESS MEETING
HELD ON THURSDAY, FEBRUARY 14, 2013, AT 12:30 P.M.
AT THE SATURNA ISLAND COMMUNITY HALL,
105 EAST POINT ROAD, SATURNA ISLAND, B.C.**

PRESENT:	Ken Hancock Paul Brent Pam Janszen Gary Richardson Beverley Neff	Chair Local Trustee Local Trustee Island Planner Minute Taker
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There were approximately ten (10) members of the public in attendance.

1. CALL TO ORDER

The meeting was called to order at 12:30 p.m. Chair Hancock acknowledged that the meeting was being held in traditional territory of the Coast Salish First Nations. Trustees and staff were introduced.

2. APPROVAL OF AGENDA

There was one addition to the agenda:
10.1 Memorandum re Proposed Bylaw No. 110 Post Public Hearing Procedures

The agenda and addendum were approved by general consent.

2.1 Questions from Public on Agenda Items

None

3. COMMUNITY INFORMATION MEETING

3.1 Proposed Bylaw No. 110 (Ocean Loop Geo-exchange)

See Notes of Community Information Meeting (CIM) of same date.

4. PUBLIC HEARING

4.1 Proposed Bylaw No. 110 (Ocean Loop Geo-exchange)

See separate Record of Public Hearing (PH) of same date.

5. PREVIOUS MEETINGS

5.1 Local Trust Committee Minutes for Adoption

5.1.1 Adopted Minutes of November 8 , 2012 Local Trust Committee Business Meeting

For information only.

5.2 Public Hearing Records and Community Information Meeting Notes

5.2.1 Received Notes of November 8, 2012 Community Information Meeting

For information only.

5.2.2 Received Record of November 8, 2012 Public Hearing

For information only.

5.3 Section 26 Resolutions-without-meeting

For information only.

5.4 Advisory Planning Commission — none

6. BUSINESS ARISING FROM THE MINUTES

6.1 Follow-up Action Report

Planner Richardson reported that all items were completed.

7. DELEGATIONS

None

8. CORRESPONDENCE

None

9. APPLICATIONS, PERMITS, BYLAWS AND REFERRALS

9.1 Proposed Development Variance Permit SA-DVP-2012.1 (Quaintance & Elling)

As the Applicant had expected this item to be dealt with at 1:30 p.m. and was not yet present, it was deferred until after 9.3.

Planner Richardson explained the four variances being requested and reviewed the responses from the referral process.

Resolution SA-LTC-01-2013

It was Moved and Seconded that Saturna Island Local Trust Committee amend the draft variance permit SA-DVP-2012.1 (Quaintance and Elling) by removing item 2 (d).

CARRIED

Resolution SA-LTC-02-2013

It was Moved and Seconded that Saturna Island Local Trust Committee issue the permit SA-DVP-2012.1 (Quaintance and Elling) as amended.

CARRIED

9.2 North Pender Bylaw No. 192 Referral

Resolution SA-LTC-03-2013

It was Moved and Seconded that the Saturna Island Local Trust Committee's interests are unaffected by North Pender Island Local Trust Committee Bylaw No. 192.

CARRIED

9.3 SA-RZ-2012.1 (Nepenthe Holdings Ltd) Staff Report

The proposal is to rezone a 3.62 hectare (8.94 acre) waterfront property on Boot Cove Road to allow for four strata lots to be created. This would allow for the three existing waterfront dwellings to be sited on separate strata lots with one additional vacant lot across the road. Each of the four lots would be permitted a dwelling, which would mean a density increase which is not allowed in the current Official Community Plan.

Planner Richardson reported that at the LTC's request he had discussed with the applicant the transfer of density options as well as the possibility of amenity zoning contained in his August 29, 2012 report.

The applicant has subsequently responded proposing a community amenity, a gravel surfaced 10-12 car parking lot, on the corner of Boot Cove Road and East Point Road, in exchange for the LTC allowing the proposed rezoning for four lots and four dwellings.

Questions were raised in the ensuing discussion:

- whether or not the Ministry of Transportation and Infrastructure (MOTI) would approve such a rezoning or subsequent subdivision
- how the new septic regulations would affect such a subdivision
- and how the applicant would respond to the LTC's response that the amenity offered falls short of fair exchange for an increase in density and the ensuing community upheaval that would result.

Resolution SA-LTC-04-2013

It was Moved and Seconded that the Saturna Island Local Trust Committee request the applicant to check the septic regulations and bring a more substantial amenity proposal to the committee; and that the planner talk with MOTI about the project and report back.

CARRIED

Resolution SA-LTC-05-2013

It was Moved and Seconded that the Saturna Island Local Trust Committee direct staff to arrange a Community Information Meeting regarding SA-RZ-2012.1 (Nepenthe Holdings Ltd) to be held in conjunction with the April 18, 2013, business meeting.

CARRIED

9.4 SA-SUB-2012.1 (Sewell)

At a previous LTC meeting (November 8, 2012) the LTC granted a variance to allow for this proposed two-lot subdivision to be created where one of the lots (proposed Lot A) has a width less than one third its depth. Planner Richardson recommended waiving the statutory requirement for a 10% perimeter in this instance as it would appear to create no negative effect on neighbours or on future residents of the new lots.

Resolution SA-LTC-06-2013

It was Moved and Seconded that pursuant to Section 944(2) of the Local Government Act, the Saturna Island Local Trust Committee grant exemption from the 10% perimeter provisions of Section 944(1) of the *Local Government Act* for proposed Lot A of subdivision application SA-SUB-2012.1 (Sewell).

CARRIED

10. LOCAL TRUST COMMITTEE PROJECTS

10.1 Ocean Loop Geo-exchange Bylaw No. 110 – for further consideration

Planner Richardson explained the Post Public Hearings procedures. In response to the suggestion heard in the Public Hearing, the Trustees discussed how best to include an option for using saline water, as well as fresh water or propylene glycol, as a heating exchange fluid in the ocean loops.

Resolution: SA-LTC-07-2013

It was Moved and Seconded that the Saturna Island Local Trust Committee Proposed Bylaw No. 110, cited as “Saturna Island Land Use Bylaw 78, 2002, Amendment No. 2, 2012” be amended by replacing “fresh water” with “water”.

CARRIED

Resolution SA-LTC-08-2013

It was Moved and Seconded that Saturna Island Local Trust Committee Proposed Bylaw No. 110, cited as “Saturna Island Land Use Bylaw 78, 2002, Amendment No. 2, 2012” as amended, be given Second Reading.

CARRIED

Resolution SA-LTC-09-2013

It was Moved and Seconded that Saturna Island Local Trust Committee Proposed Bylaw No. 110, cited as “Saturna Island Land Use Bylaw 78, 2002, Amendment No. 2, 2012” be given Third Reading.

CARRIED

Resolution SA-LTC-10-2013

It was Moved and Seconded that the Saturna Island Local Trust Committee Proposed Bylaw No. 110, cited as “Saturna Island Land Use Bylaw 78, 2002, Amendment No. 2, 2012” be forwarded to the Secretary of the Islands Trust for Executive Committee approval.

CARRIED

11. REPORTS

11.1 Work Program Reports

11.1.1 Saturna Island Local Trust Committee Work Program Report dated February, 2013

Resolution SA-LTC-11-2013

It was Moved and Seconded that the Saturna Island Local Trust Committee direct staff to move the Land Use Bylaw Review to number two on the Top Priorities list.

CARRIED

Resolution SA-LTC-12-2013

It was Moved and Seconded that the Saturna Island Local Trust Committee direct staff to move the Review of OCP Section C.1.3 and the Community Amenity Density Reserve (OCP Schedule E, Appendix A) to number one on the Top Priorities list.

CARRIED

11.2 Applications Report

11.2.1 Saturna Island Applications Report dated February, 2013

Presented for information.

11.3 Expense/Budget Reports

11.3.1 Trustee and Local Expenses

Presented for information.

11.4 Bylaw Enforcement

None

11.5 Policies and Standing Resolutions Report

Presented for information.

11.6 Saturna Island LTC Web Page

Staff was directed to update the webpage by:

- adding the new Work Program Top Priorities
- removing the request for APC Expressions of Interest
- removing Parkland Zoning

11.7 Chair's Report

Chair Hancock said it was a busy time for the Executive Committee as they were preparing for Trust Council's meeting on March 5-7 with the budget as the focus. This is the first time Trust Council will meet on Thetis Island and he was looking forward to it.

11.8 Trustee Reports

Trustee Brent reported that the Trust Programs Committee, which he chairs, continues to advocate for good ferry service and lower ferry fares for island communities. Advocacy depends on funding, which will be decided at the next Trust Council.

Trustee Janzsen has had knee surgery and so missed the last two sessions of the Gulf Islands National Park Reserve Advisory Committee. She says it is a good group and Parks Canada employees are very respectful regarding the input of the non-Parks Canada members. The group is currently working on the Gulf Islands National Park Reserve Management Plan. She is looking forward to Trust Council on Thetis Islands in March.

12. OTHER BUSINESS

12.1. Next Business Meeting – April 18, 2013, Saturna Island Recreation Centre, Lounge

12.1.1 Amend the 2013 LTC Meeting Schedule by changing the September 19th meeting to September 26th.

Resolution SA-LTC-13-2013

It was Moved and Seconded that the Saturna Island Local Trust Committee amend the 2013 LTC Meeting Schedule by changing the September 19th meeting to September 26th.

CARRIED

12.2 Natural Marine Conservation Area Exclusion Zones

The Trustees agreed that there was no further action necessary at this time.

12.3 Appointment of Advisory Planning Commission Secretary

Resolution SA-LTC-14-2013

It was Moved and Seconded that the Saturna Island Local Trust Committee appoint Beverley Neff as the secretary to the Saturna Island Advisory Planning Commission.

CARRIED

13. TOWN HALL MEETING

Chair Hancock opened the Town Hall meeting for comments and questions.

John Guy expressed concerns about density creeping up without discussion and gave examples of Nepenthe Holdings, Old Point Farm's rezoning, ancillary buildings being designated as cottages and cottage size measurements moving from exterior walls to interior dimensions. He stated that density needs to be defined, discussed and clarified so that the community agrees on how much human use is wanted on this island. He urged clarity, openness and a clear rule of law.

John Hutchinson was opposed to the amenity offered by Nepenthe Holdings, saying it was too low and conflicted with a commercial parking lot in the same area. He suggested that a mass mail out should emphasize the density review and recommended finding wide community consensus before making any LTC decisions.

Bill Douglass stated that the best way to let people know about the proposed amenity would be to put some signage on the property describing the proposal. He was against a parking lot as an amenity. The concept of density transfer would be contentious and he felt the rules need to be changed and agreed on by the community in a community plan before using such a tool.

Priscilla Ewbank was opposed to granting more density and stated that Nepenthe Holdings was out of line asking for another density when they had already been given a cottage upgraded to a residence. She was in favour of allowing three lots, but not four. She stated that the LUB has not defined amenity and to have to reconsider the density cap would be a huge cost to the community. She said the community needs to decide what it will consider an amenity and that she didn't want zoning to be changed arbitrarily.

Al Sewell suggested that the Boot Cove subdivision be put on the shelf until the community resolves amenity zoning.

Chair Hancock remarked that defining amenity zoning could be a difficult but necessary conversation about wants versus needs.

Priscilla Ewbank requested that town hall feedback be held closer to when applications are being discussed, rather than at the end of the meeting.

14. MOTION TO CLOSE MEETING

Resolution SA-LTC-15-2013

It was moved and seconded that, pursuant to Section 90(a) and (f) of the Community Charter, the Saturna Island Local Trust Committee resolves to close the meeting to the public for the purpose of adopting June 21, 2012 Saturna LTC In Camera Minutes and to consider Advisory Planning Commission appointments; and further that staff and Recording Secretary Beverley Neff remain present.

CARRIED

The meeting was closed at 3:58 p.m.

15. RECALL TO ORDER

15.1. Rise and Report from Closed Meeting

The meeting was reopened at 4:02 p.m.

Chair Hancock reported that Ryan Johnson had been appointed to the Advisory Planning Commission.

16. ADJOURNMENT

Resolution SA-LTC-19-2013

It was Moved and Seconded that the meeting be adjourned at 4:06 p.m.

CARRIED

RECORDER

CHAIR

**Community Information Meeting
Received For Information
By Local Trust Committee**

**NOTES OF THE SATURNA ISLAND LOCAL TRUST COMMITTEE
COMMUNITY INFORMATION MEETING REGARDING
PROPOSED BYLAW No. 110 (OCEAN LOOP GEO-EXCHANGE)
HELD ON THURSDAY, FEBRUARY 14, 2013 AT 12:38 P.M.
AT SATURNA ISLAND COMMUNITY HALL,
105 EAST POINT ROAD, SATURNA ISLAND, B.C.**

PRESENT:	Ken Hancock	Chair
	Paul Brent	Local Trustee
	Pam Janszen	Local Trustee
	Gary Richardson	Island Planner
	Beverley Neff	Minute Taker

There were approximately ten (10) members of the public in attendance.

The Community Information Meeting was call to order at 12:38 pm.

3.1 Saturna Island Proposed Bylaw No. 110 (Ocean Loop Geo-exchange)

Bylaw 110, would allow ocean loop geo-exchange systems, for the purpose of domestic heating and cooling accessory to the residential use of the upland property, to be installed in the WA and WO water zones.

Planner Richardson reported that the proposed bylaw has had First Reading and this Community Information Meeting was to allow the public to ask any questions about the bylaw before the required Public Hearing.

Concerns were raised and answered about the following issues, among others:

- the use of propylene glycol to prevent freezing, and the possibility of allowing saline as an option
- whether other Islands were allowing ocean loop geo-exchange
- the benefit of 95% reduction in carbon emissions
- how the piping crossing the beach was disguised
- if there were environmental concerns if the propylene glycol leaked into the ocean
- the necessary permits or approvals from provincial and federal agencies.

The meeting was adjourned at 12:50 p.m.

RECORDER

DATE

**Public Hearing Record
Received For Information
By Local Trust Committee**

**RECORD OF THE SATURNA ISLAND
LOCAL TRUST COMMITTEE PUBLIC HEARING REGARDING
PROPOSED BYLAW NO. 110 (OCEAN LOOP GEO-EXCHANGE)
HELD ON THURSDAY, FEBRUARY 14, 2013 AT 12:51 P.M.
AT SATURNA ISLAND COMMUNITY HALL,
105 EAST POINT ROAD, SATURNA ISLAND, B.C.**

PRESENT:	Ken Hancock	Chair
	Paul Brent	Local Trustee
	Pam Janszen	Local Trustee
	Gary Richardson	Island Planner
	Beverley Neff	Minute Taker

There were approximately thirteen (13) members of the public in attendance.

The Public Hearing was called to order at 12:51 pm.

4.1 Proposed Bylaw No. 110 (Ocean Loop Geo-exchange)

Chair Hancock read an opening statement for the Public Hearing and added that anyone who had sent correspondence was already on the public record. He declared the meeting open to consider the following:

Proposed Bylaw No. 110 cited as “Saturna Island Land Use Bylaw No.78, 2002, Amendment No. 2, 2012”

Planner Richardson summarized the hearing notice and stated that a public hearing notice was put in newspapers and on local bulletin boards. He added that the public must comment before the close of the hearing, whether it is written or verbal, and that once the meeting is closed, any additional information could be forwarded to the planning staff, but not to trustees. He informed the committee of the agencies that the bylaw was referred to and summarized their responses.

Chair Hancock then invited submissions from the public.

John Hutchinson expressed support of bylaw using propylene glycol, citing the benefit of 95% reduction in carbon emissions.

Beverly Vreeswijk wanted polypropylene glycol banned from use, as it didn't occur naturally in water.

John Hutchinson and **Janet Land** expressed support for adding saline use to the bylaw.

Chair Hancock asked three times if there were any more submissions. Hearing none, he thanked the people for their contributions and declared the Public Hearing closed at 1:06 p.m.

I CERTIFY THAT THIS IS A FAIR AND ACCURATE SUMMARY OF THE NATURE OF REPRESENTATIONS RESPECTING THE MEETING HELD.

RECORDER

CHAIR



RWM From: February 06, 2013 To: April 09, 2013

Saturna Island

Resolution #	Action	Resolution Description	Resolution Date
2013-03	In Favour	THAT Saturna Island Local Trust Committee Meeting Minutes of February 14, 2013 be Adopted; and THAT Saturna Island Local Trust Committee Community Information Meeting Notes of February 14, 2013 be received; and THAT Saturna Island Local Trust Committee Public Hearing Record of February 14, 2013 be received	Mar 05, 2013



Islands Trust

Follow Up Action Report w/ Target Date

Saturna Island

Feb-14-2013

No.	Activity	Responsibility	Target Date	Status
1	SA-DVP-2012.1 (Quaintaince) - approved as amended. Amendment is removing 2(d) of the permit.	Kathy Jones Gary Richardson		Done
2	North Pender Island Bylaw 192 referral - LTCs interests unaffected by bylaw.	Kathy Jones		Done
3	SA-RZ-2012.1 (Nepenthe Holdings Ltd) - Staff to work with applicant to determine if more substantial amenity can be provided. Staff to arrange a CIM for the April Mtg. Applicant to determine sewage regulations if property is to be subdivided to see if its possible.	Gary Richardson		On Going
4	SA-SUB-2012.1 (Sewell) - 10% road frontage waiver granted, advise applicant and MoTI.	Gary Richardson		Done
5	Ocean Loop Geo-exchange Bylaw 110 - amended by removing the word "fresh" from the word "freshwater" in the two intances that it appears. - done - 2nd reading as amended - done - 3rd reading - done - forward to executive for approval (March 5 exec. Mtg.) - done	Kathy Jones Gary Richardson		Done
6	Work Program Top Priorities to be amended by: -removing 'Community Park Zoning' from the top priority list. -removing 'Provincial Riparian Areas Regulation' from the top priority list.	Gary Richardson		Done

-add 'Review of Community Amenity Density Reserve' to the top priority list.

- add 'Land Use Bylaw Review' to the top priority list.

7	amend the Saturna LTC web page by: removing, Saturna Island APC Expression of interest under the heading "Jan 2013". removing, the title "Community Parkland Zoning" and all of the items listed under that title. Adding, the amended work program priorities.	Kathy Jones	Done
8	Change meeting notices to show amended september LTC meeting date as September 26, 2013. September 19, 2013 to be cancelled.	Sharon Lloyd-deRosario	Done
9	Appointment of Advisory Planning Commission Member "Ryan Johnson".	Sharon Lloyd-deRosario	Done
10	In camera minutes of June 21, 2012 adopted. (as drafted?)	Sharon Lloyd-deRosario	Done
11	Bev Neff to be appointed as the secretary for the APC	Sharon Lloyd-deRosario	Done

SATURNA ISLAND TRUST COMMITTEE
BYLAW NO. 110

A BYLAW TO AMEND SATURNA ISLAND LAND USE BYLAW NO. 78, 2002

The Saturna Island Local Trust Committee, being the Trust Committee having jurisdiction in respect of the Saturna Island Trust Committee Area under the Islands Trust Act, enacts as follows:

A. The Saturna Island Land Use Bylaw, No. 78 is amended as follows:

- 1. Subsection 11.1.1 (WA zone) is amended by inserting the following as new article (4):
"11.1.1(4) Ocean loop geo-exchange systems for the purpose of domestic heating and cooling accessory to the residential use of the upland property."
2. Subsection 11.5.1 (WO zone) is amended by inserting the following as new article (5):
"11.5.1(5) Ocean loop geo-exchange systems for the purpose of domestic heating and cooling accessory to the residential use of the upland property."
3. Section 15.1 (Definitions) is amended by inserting the following as a new subsection 15.1.30 and re-numbering current subsection 15.1.30 accordingly:
"15.1.30 "ocean loop geo-exchange system" means a renewable geo-exchange system (geothermal heat exchange) utilizing the natural occurring temperature of the ocean for the purpose of heating and cooling that:
(a) is a closed-loop system using only water or a combination of water and propylene glycol as the circulating heat transfer fluid,
(b) meets or exceeds the Canadian CSA design standards CAN/CSA-448-02, as amended from time to time, and
(c) is designed and installed by a Registered System Designer accredited by the Canadian Geexchange Coalition, or the International Ground Source Heat Pump Association."

Information Note: Installation of marine geothermal loops are also required to obtain the necessary permits or approvals from provincial and federal agencies."

B. This Bylaw may be cited as "Saturna Island Land Use Bylaw 78, 2002, Amendment No. 2, 2012".

READ A FIRST TIME this 8th day of November ,2012.

PUBLIC HEARING HELD this 14th day of February 2013

READ A SECOND TIME this 14th day of February , 2013

READ A THIRD TIME this 14th day of February , 2013

APPROVED BY THE EXECUTIVE COMMITTEE OF THE ISLAND TRUST this 19th day of March , 2013

ADOPTED this day of , 20XX

Chair

Deputy Secretary

File No.:**To:** Saturna Island Local Trust Committee**From:** Gary Richardson, Island Planner**CC:** Robert Kojima, RPM

Re: Work Program Priorities**THE PROPOSAL:**

The Saturna LTC amended its work program at its February 14, 2013 LTC meeting to the following:

- 1) OCP- Review Community Amenity Density Reserve
 - Review Density provisions of OCP section C.1.3 (density limit)
- 2) Review Land Use Bylaw
- 3) Ocean Loop Geo-exchange

This report briefly comments on the LTCs work program priorities, provides the LTC with options and makes recommendation on proceeding.

STAFF COMMENTS:**1) OCP- Review Community Amenity Density Reserve**

- Review Density provisions of OCP section C.1.3 (density limit)

The Community Amenity Density Reserve (CADR) is contained in the OCP as Schedule "E" Appendix A. The CADR is a bank of subdivision and residential density that is added to when a property has density removed through rezoning. The density can be withdrawn from the bank and granted to a property when a community amenity is provided.

There are several conditions that apply to the use of the CADR they include: density from park land and crown land cannot be used; amenities should include land for public purposes, environmental protection, heritage site protection, community forests, parks, or heritage areas; not permitted in certain land use designations; not permitted on lots

less than 4.05 hectares or lots covenanted against subdivision; and additional density when used should be done in a way that minimizes GHG emissions.

There needs to be density in the CADR in order for someone to apply through a rezoning application to take it out. An amenity also needs to be provided before density is withdrawn.

This CADR is different than amenity zoning provisions set up using section 904 of the Local Government Act in that there can be no net increase in density. The CADR is more like a transfer of development rights from one property, to the CADR, to another property with an amenity being provided.

Presently by staff's calculation there are no residential densities in the CADR; however there are 6 subdivision or lot densities. The 6 lot densities resulted in the development potential of a lot being reduced from 7 lots to 1. The lot retained its ability to have 7 dwellings but gave up its subdivision potential of 7 lots.

Unless there is density in the CADR it cannot be used, as section C.1.3 of the OCP does not allow any rezoning or any other planning tool to increase subdivision capacity or residential density within the Saturna Island Local Trust area.

The CADR and the density restrictions in the OCP are two separate sections that both need to be considered when the permitted density on a property is being changed.

The CADR as drafted is a reasonable policy to consider when a rezoning is being considered that involves a density increase. The only problem with the CADR since it was implemented in 2001 is that it has never had any residential density added to it.

Staff could expand on the conditions contained in the CADR such as more specific amenities, more specific areas that density should be taken from and added to but the LTC may want to maintain flexibility in these areas when making future decisions on how to apply the density contained in the CADR.

As mentioned section C.1.3 of the OCP places a restriction on the increase in subdivision capacity or residential density beyond what existed in 2001 when the OCP was adopted.

It is recommended that the LTC may review the policies in section C.1.3 to determine if there is community support to amend the policies to allow an increase in certain circumstances in a way that makes the CADR more effective.

If amending the density restrictions in the OCP is pursued it is recommended that a community process be designed and implemented.

2) Review Land Use Bylaw

The review of the LUB was originally brought forward in response to the BEN bylaw. BEN is a bylaw enforcement tool that sets a ticket cost to every regulation in the LUB. When all of the LUB regulations are listed as a schedule to the bylaw it is quite substantial.

Staff has the following comments on possible LUB amendments.

Amending the LUB to reduce the number of regulations to allow the BEN bylaw to be reduced in size does not seem necessary as most of the regulations in the LUB are common regulations found in any bylaw such as setbacks, density and height regulations and likely would not change much if reviewed with this goal in mind. The regulations have been reviewed and amended over time and the BEN bylaw simply reflects what is contained in the LUB.

One type of review that is often initiated by LTCs is a technical review of a LUB. This LUB was adopted in 2002 and since then some of the references to acts and ministries will have changed and also staff, the public, and the LTC have identified wording that should be clarified.

It is recommended that a bylaw be initiated to amend technical amendments that are required due to the passage of time and that any errors, omissions and inconsistencies also be included in the amending bylaw. The bylaw will be prepared as a draft with a full explanation of the proposed amendments in a companion report. The national park zoning could be part of this amendment; however, it would also need a companion OCP amendment.

A reoccurring subject on Saturna has been the lack of accommodations. A review of the type of accommodations that could be implemented on Saturna could be a worthwhile project. The LUB currently allows certain types of accommodations such as bed and breakfasts, short term vacation rentals and commercial visitor accommodation units. The existing types of accommodations can be reviewed to determine if they can/should be expanded. New types of accommodations can be researched and discussed such as: country guest houses, hostels and campsites.

It is recommended that the LTC initiate a review of the accommodation types permitted on Saturna Island in order to determine if new types can be permitted and/or existing types can be expanded.

The implementation of secondary suites is an LUB amendment topic that the LTC could pursue. Saltspring Island and Mayne Island are presently looking at secondary suites as a type of affordable housing.

A review of Commercial and Industrial Zoning is a topic that can be reviewed in the LUB. Staff would review the existing land zoned for commercial and industrial use to determine if there is a sufficient land zoned for the island for the next few years.

The OCP was amended to include provisions for GHG reduction the LUB could be reviewed to implement some or all the GHG policies.

3) Ocean Loop Geo-exchange

The bylaw to implement an amending bylaw (158) is being considered for adoption by the LTC at its April LTC meeting. If adopted this project can be taken off the priority list and replaced with another project.

Project List

The following is the LTCs present project list.

1. Targeted LUB review – Ben Bylaw.
2. Sensitive Ecosystem mapping
3. Geological Hazard mapping
4. Raptor nest mapping
5. East Point water conservation
6. Agricultural building water course setbacks
7. National Parklands OCP and LUB amendments

RECOMMENDATIONS:

1. That as a work program priority that staff be directed to prepare a staff report with a list of technical amendments required to update and clarify the LUB.

2. That as a work program priority that staff be directed to prepare a report and proposed timeline for reviewing the types and capacity of tourist accommodations on Saturna Island.
3. That as a work program priority that staff be directed to prepare a report and proposed timeline for reviewing the density provisions of the OCP.

Prepared and Submitted by:

Gary Richardson

April 10, 2013

Date

Concurred in by:

April 10, 2013

Date



Islands Trust

Top Priorities

Saturna Island

No.	Description	Activity	Received/Initiated	Responsibility	Target Date	Status
1	Community Amenity Density Reserve Density provisions (OCP - C.1.3)	Review OCP sections	Feb-14-2013	Gary Richardson		On Going
2	Review Land Use Bylaw		Feb-14-2013	Gary Richardson		On Going
3	Ocean loop Geo-Exchange	EC approval, adopt bylaw - PENDING	Aug-31-2011	Gary Richardson	Apr-11-2013	On Going



Projects

Saturna Island

No.	Description	Activity	Received/Initiated	Status
1	Land Use Bylaw Review - targeted (Ben Bylaw)		Sep-06-2012	On Going
2	Sensitive Ecosystem Mapping and DPA review	1. Complete Sensitive Ecosystem Mapping 2. Consider options for implementing sensitive ecosystem protection, including DPA	Feb-25-2009	On Going
3	Geological Hazard Mapping		Feb-25-2009	On Going
4	Raptor Nest Mapping		Feb-25-2009	On Going
5	East Point Water Conservation		Sep-30-2011	On Going
6	Agricultural Building Watercourse Setbacks		Sep-30-2011	On Going
7	National Park Lands OCP and LUB amendments		Feb-09-2012	On Going



Applications w/ Status - Saturna Island Status: Open

Applications

Development Permit

File Number	Applicant Name	Date Received	Purpose
SA-DP-2013.1	Nancy Angermyer & Planner: Gary Richardson	Mar-15-2013	204 NARVAEZ BAY RD to resolve a boundary irregularity

Planning Status

Status Date: Apr-08-2013

Meeting with applicants April 18 to discuss.

Status Date: Apr-08-2013

Target mtg. for LTC consideration June 6/13

Development Variance Permit

File Number	Applicant Name	Date Received	Purpose
SA-DVP-2013.1	Nancy Angermyer & Planner: Gary Richardson	Mar-15-2013	204 NARVAEZ BAY RD Panhandle variance - superimposed registered easement

Planning Status

Status Date: Apr-08-2013

Staff to meet with Applicants to discuss April 18/13

Status Date: Apr-08-2013

Target agenda for LTC consideration June 6/13

Rezoning

File Number	Applicant Name	Date Received	Purpose
SA-RZ-2012.1	Jonathan Yardley Architect Inc	Jan-26-2012	Rezone to allow subdivision

Planner: Gary Richardson

Planning Status

Status Date: Feb-04-2013

Staff report prepared for February 14, 2013 LTC meeting in response to proposed amenity.

Status Date: Oct-30-2012

Staff to prepare a report for November 8, 2012 LTC meeting.

Status Date: Jul-31-2012

Staff report prepared for sept LTC meeting

Subdivision

File Number	Applicant Name	Date Received	Purpose
SA-SUB-2010.1	Angermeyer Planner: Gary Richardson	Jan-28-2010	204 NARVAEZ BAY RD To create 2 new lots

Planning Status

Status Date: Apr-08-2013

DP and DVP applications received, target LTC agenda June 6/13

Status Date: Feb-04-2013

Staff to contact applicants prior to Feb 14, 2013 LTC meeting to determine status.

Status Date: Jul-19-2012

applicants in process of applying for DVP and DP

File Number	Applicant Name	Date Received	Purpose
SA-SUB-2012.2	Saturna Garage & Contracting Ltd. c/o Wolfe-Milner Land Surveying Inc. Planner: Gary Richardson	Jul-04-2012	Creating 4 lots

Planning Status

Status Date: Apr-08-2013

PLA issued March 26, 2013

Status Date: Feb-04-2013

Staff to contact applicant to discuss details of MoTI response.

Status Date: Nov-02-2012

Response sent to MoTI

File Number	Applicant Name	Date Received	Purpose
SA-SUB-2012.3	c/o Wolfe Milner Land Surveying Inc. Planner: Gary Richardson	Aug-01-2012	Proposed boundary adjustment

Planning Status

Status Date: Apr-08-2013

PLA not yet issued.

Status Date: Feb-04-2013

Staff to contact applicant to discuss details of MoTI response.

Status Date: Nov-02-2012

Response sent to MoTI

Kathy Jones

From: Nicole Ranger
Sent: March-26-13 11:54 AM
To: Gary Richardson; Ken Hancock; Pamela Janszen; Paul Brent; Robert Kojima; Kathy Jones; Sharon Lloyd-deRosario
Cc: Nancy Roggers
Subject: Saturna Expense Report March 2013

Islands Trust

LTC EXP SUMMARY REPORT F2012

Invoices posted to March 31, 2013

660 Saturna	Invoices posted to March 31, 2013	Budget	Spent	Balance
65000 660	LTC "Trustee Expenses"	1,100.00	114.50	985.50
65200 660	LTC Local Exp LTC Meeting Expenses	3,000.00	1,643.81	1,356.19
65210 660	LTC Local Exp APC Meeting Expenses	-	442.26	(442.26)
65220 660	LTC Local Exp Communications	-	-	-
65230 660	LTC Local Exp Special Projects	-	602.31	(602.31)
65240 660	LTC Local Exp Miscellaneous	-	-	-
TOTAL LTC Local Expense		3,000.00	2,688.38	311.62
73001 660 3007	Saturna RAR	4,000.00	3,114.73	885.27
TOTAL Project Expense		4,000.00	3,114.73	885.27

Nicole Ranger

Finance Clerk
 Islands Trust
 200-1627 Fort Street
 Victoria, BC V8R 1H8
 Phone: (250) 405-5152
 Fax: (250) 405-5155

Preserving Island communities, culture and environment



Please consider the environment before printing this email

Updated: February 9, 2012

Saturna Island Local Trust Committee POLICIES AND STANDING RESOLUTIONS

No	Meeting Date	Resolution No.	Issue	Policy
1.	May 16/07	SA-LTC-16-07	Travel Trailer or Camper	<p>It was Moved and Seconded that staff be directed to not take enforcement action against property owners when a travel trailer or camper is located on a lot when:</p> <p>The travel trailer or camper is being used for recreational purposes by the owners of the lot and;</p> <p>The travel trailer or camper is being used intermittently and for short periods not exceeding two months.</p> <p>Notwithstanding this direction, staff is to take action to prevent the recreational use of travel trailers or campers on inappropriately zoned land if:</p> <p>The travel trailer or camper is being used as a second residence or;</p> <p>The trailer or camper is situated within the setbacks for a structure or;</p> <p>There are serious safety issues, unsightliness, noise, or health problems related to the use or;</p> <p>A complaint based on the above three items is received from a person who owns neighboring property.</p> <p>Nothing in this direction should be interpreted by a property owner as giving permission to violate the Land Use Bylaw and the Saturna Island Trust Committee may change this policy at any time and may give direction to enforce the Bylaw at any time.</p>
2.	August 20/08	SA-LTC-43-08	Bylaw Enforcement: Short Term Vacation Rentals	<p>It was Moved and Seconded THAT given finite resources available for enforcement activities and in order to ensure the most effective results for enforcement activities, STVRs not permitted by Section 2.16.10 of the Saturna Island Land Use Bylaw No. 78 that have one or more of the following characteristics will be subject to enforcement:</p> <ol style="list-style-type: none"> 1. They are advertised on the internet, newspapers or other media; 2. They are not managed by the property owner; 3. More than one STVR per constructed residence on the lot is simultaneously made available for STVR; 4. While the property is rented persons are also staying in tents, trailers, or RV's; 5. There are issues related to health and safety; 6. There is a written complaint by owners or residents about bona fide nuisance issues such as noise or parking congestion related to the STVR;

				<p>7. The owner of the property uses more than one property on Saturna Island as an unpermitted STVR.</p> <p>And THAT nothing in this enforcement policy should be interpreted as giving permission to violate the Land Use Bylaw and the Saturna Island Local Trust Committee may change this policy at any time and may give direction to expand enforcement activities at any time.</p>
3.	February 25/09	SA-LTC-09-09	Adopt LTC Minutes by RWM	It was Moved and Seconded that the Saturna Island Local Trust Committee draft minutes be adopted by Resolution without meeting within 30 days of the meeting and posted to the website.
4.	June 22/11	SA-LTC-	Adopting In Camera Minutes	It was Moved and Seconded that the Saturna Island Local Trust Committee adopt a Standing Resolution to direct staff to place the in camera minutes on the agenda when there is a need to close the meeting or at least once a year.
5.	August 31/11	SA-LTC-32-11	Adopt Ocean Loop Geo-thermal Exchange Enforcement Policy	<p>It was Moved and Seconded that the Saturna Island Local Trust Committee adopts the policy stated in the Islands Trust memorandum dated August 23, 2011 regarding Ocean Loop Geo-thermal Exchange Enforcement.</p> <p>“That given that the Saturna Island Local Trust Committee (LTC) has placed “ocean loop geexchange” on the LTC project list as a matter for staff review existing ocean loop geexchange systems will not be subject to enforcement unless issues of health, safety or environmental degradation arise.”</p>
6.	February 9/12	SA-LTC-11-12	Adopt SOL policy	It was Moved and Seconded that where a Liquor Control and Licensing Branch Special Occasion Licence referral relates to a property where Saturna Island Land Use Bylaw No. 78, 2002 permits public assembly uses, such as halls, recreation facilities or restaurants, and where there have been no issues related to parking or past complaints for the preceding three years, planning staff may approve the Special Occasion License without referral to the Local Trust Committee. All other Special Occasion License referrals are to be referred to the Local Trust Committee for consideration

U:\LOCAL TRUST COMMITTEES\Saturna\Policies and Standing Resolutions\Policies and standing resolutions_Feb 9 2012.doc



Islands Trust

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Population (2011):

Approximately 335

Size:

3422 hectares (8,455 acres)

Location:

27 kilometres south-east of the Swartz Bay ferry terminal on Vancouver Island.

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Saturna Island Local Trust Committee

Latest News

In this section you will find current news items that are relevant to your Local Trust Area and your community. [Subscribe](#) to the Saturna Island Latest News updates and receive the latest information on official community plan reviews, staff reports, notifications and other documents published in the latest news section.

September 2012

- [Saturna Island Property Owners Association -Water Conservation Brochure 2012](#)

Scribbler - Trustee Reports

- [April - 2013](#)
- [March - 2013](#)
- [February - 2013](#)
- [November - 2012](#)
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- [June - 2012](#)
- [March - 2012](#)

Planner Office Hours on Saturna Island

- [Planner Office Hours on Saturna Island - 2013](#)

Saturna Island Local Trust Committee Projects

Local trust committee community planning projects are initiated and managed through their Work Programs. The Work Program Top Priorities are projects that have been prioritized by the LTC and for which resources are available or anticipated to be available shortly. Projects can be significant and long term, such as an Official Community Plan Review, or may be relatively minor, such as an amendment to a regulation in a Land Use Bylaw.

- [Work Program Top Priorities](#)

Riparian Area Regulation (RAR)Implementation

- [Saturna Island Riparian Areas Regulation Stream Identification](#)
- [Implementation of Provincial Riparian Areas Regulation Staff Report - February 2012](#)
- [Map of lands potentially subject to RAR](#)
- [RAR Fact Sheet](#)
- [Link to provincial RAR website](#)
- [Riparian Areas Regulation Notice of Open House - April 28, 2012](#)
- [Land Owner Contact Letter - March 20, 2012](#)
- [Lyll Creek Upper Tidal Influence Report - June 2012](#)
- [Staff Report - June 21, 2012](#)
- [Staff Report - September 6, 2012](#)
- [Adopted Bylaw No. 109 \(OCP Amendment\)](#)

Ocean Loop Geo-exchange

- [Staff Report - August 8, 2012](#)

Committee Links

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- [Staff Report - October 30, 2012](#)
- [Proposed Bylaw No. 110](#)

General

- [Budget Request 2013 - 2014](#)
- [Policies and Standing Resolutions Chart](#)
- ["A Guide to Environmentally Friendly Building and Renovating in the Southern Gulf Islands" booklet](#)
- [A "Choosing a Building Site on your Lot" fact sheet](#)
- [A "Making Changes to your Lot Line" fact sheet](#)
- [An "Applying for a Variance" fact sheet](#)

Ecosystem Mapping Webpage

Applications

SA-RZ-2012.1 (Yardley)

- [Staff Report - March 30, 2012](#)
- [Staff Report - August 29, 2012](#)

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Saturna Island Local Trust Committee

The Saturna Island Local Trust Committee (LTC) held five regular business meetings, one special meeting and three public hearings during this period. The LTC received development applications and referrals, including an ALR referral, two development variance permits, three subdivision referrals, and a temporary use permit. A number of building permit referrals were also received.

The LTC completed a number of projects during the year. The LTC adopted amendments to its OCP and Land Use Bylaw to designate and zone community parks. The OCP was amended to adopt a revised development permit area that brought the bylaw into compliance with the provincial Riparian Areas Regulation. The LTC also adopted an amendment to its LUB to permit ocean loop geo-exchange systems in the marine zones. Finally, the LTC initiated two new projects: to undertake a targeted review and update of its LUB and to review the policies pertaining to the Community Amenity Density Reserve.

Date February 25, 2013 **File Number** FILE
To Local Trust Committees
From Local Planning Committee
Re Renewable Energy Technologies in the Trust Area – Ocean Based Geo-Exchange Systems

At its meeting on February 7, 2012, the Local Planning Committee passed a resolution requesting that the attached report be circulated to all Local Trust Committees for information.

The report outlines the ocean loop geo-exchange technology and how it is being permitted currently within the Trust Area. It includes background information on ocean loop geo-exchange systems, the possible impacts and benefits of their use and briefly outlines what is currently being done or proposed on some of the Islands (i.e. North Pender, Saturna, Executive Islands, Galiano, Mayne, Salt Spring, South Pender and Thetis) in accommodating ocean loop geo-exchange systems.

Attachment: Renewable Energy Technologies in the Trust Area – Ocean Loop Geo-Exchange Systems Report



REQUEST FOR DECISION

To: Local Planning Committee

For the Meeting of: February 7, 2013

From: Kris Nichols, Island Planner

Date: January 31, 2013

SUBJECT: RENEWABLE ENERGY TECHNOLOGIES IN THE TRUST AREA - OCEAN LOOP GEO-EXCHANGE SYSTEMS

RECOMMENDATION:

That the Local Planning Committee circulate this report, *Renewable Energy Technologies in the Trust Area - Ocean Loop Geo-Exchange Systems*, dated January 31, 2013, to all Local Trust Committees and planning staff so that they are aware of the implementation options for ocean loop geo-exchange systems and their status in other Local Trust Areas.

CHIEF ADMINISTRATIVE OFFICER COMMENTS: N/A

IMPLICATIONS OF RECOMMENDATION

ORGANIZATIONAL: Adoption of bylaws to accommodate the utilization of geo-exchange systems will enable owners to implement heating and cooling technology that reduces Greenhouse Gas Emissions and is therefore environmentally responsible.

FINANCIAL: Staff time would be required to develop and implement bylaws or amend existing bylaws to accommodate ocean loop geo-exchange systems.

POLICY: There are six (6) Trust Policy statements to be considered with the accommodation of ocean loop geo-exchange systems into Local Trust Area (LTA) bylaws. All LTA OCPs should contain targets, policies and actions to reduce greenhouse gas emissions (GHG) as a result of changes to the *Local Government Act* and the implementation of bylaws to permit ocean loop geo-exchange supports this.

IMPLEMENTATION/COMMUNICATIONS: The LTC and staff would work with clients to educate them on the options available to accommodate the use of geo-exchange systems within their Local Trust Area.

BACKGROUND

Description of Issue:

At the last Committee meeting a briefing report was reviewed outlining the ocean loop geo-exchange technology and how it is being permitted within the Trust Area currently. The Committee requested some further clarification on the use the ocean loop geo-exchange systems presenting a critical overview of the ocean based geo-exchange approaches being used.

This report will expand on the previous report considered at the November 7, 2012 meeting, presenting background information on ocean loop geo-exchange systems, the possible impacts

and benefits of their use and briefly outlining what is currently being done or proposed on some of the Islands (i.e. North Pender, Saturna, Executive Islands, Galiano, Mayne, Salt Spring, South Pender and Thetis) in accommodating ocean loop geo-exchange systems.

The report is not to be interpreted as an endorsement of this type of system versus the more conventional forms of heating and cooling that are being used based on climate change or any other environmental efficiency or cost saving. The fact is that these systems are becoming more frequent and will likely continue to be so in the future and Local Trust Committees will have to find a way to consider accommodating these new technologies within the current land use regulations. Many of the islands are already accommodating them as the systems are introduced or as bylaws are being updated.

REPORT:

Local Planning Committee has on its Work Program List: "1. Encouraging Green Technologies" with the intent that LPS staff will develop model policy and regulatory wording to address ocean based geo-exchange and draft an RFD for the LPC.

Changes to technology and an increasing demand for the use of this technology has resulted in an increase in proposals within the Islands Trust Area to install ocean based geo-exchange systems, typically for new construction. An ocean based geo-exchange system uses temperature gradients in the ocean to provide heating and cooling. The infrastructure typically consists of pipes containing a heat transfer fluid that are anchored to the seabed and connected to a structure (typically a house, but commercial properties may look at this as well) on the upland property.

Although geo-exchange heating, using latent heat from the ground, and heat pumps using heat from the air, is not new, these systems are typically located on the same lot as the building and thus have not been an issue with respect to zoning. These systems are infrastructure accessory to building (the principal use) and are permitted outright in all zones on the same lot as the principal use (in the same way a septic field would be accessory). Ocean-based loops, however, differ in that the foreshore is generally in a different zone and therefore, that portion of the system is not located on the same lot as the building and thus would not meet the definition of an accessory use. Being partially located on the ocean floor also requires a Crown lease as any dock would.

Technology

The terminology preferred by the industry for this type of installation is a geo-exchange system. The term 'geothermal' is now reserved for larger, higher temperature systems (e.g. neighbourhood heating). These systems are similar to air source heat pumps but geo-exchange systems extract heat from the ground or water and transfer it to the air within a building.

Types of systems include:

- Closed loop vs. open loop:
 - Open loop uses a conventional well to extract water, which after the heat is extracted the water is then returned to a pond, stream or other well.
 - Closed loops circulate a heat transfer fluid.
- Vertical vs. horizontal
 - Horizontal systems typically bury pipes 1.8 to 2.4 metres either below ground or below the winter ice level in a water body or the low tide mark in the ocean
 - Vertical systems use boreholes 45 to 60 metres. Boreholes for geothermal wells are regulated by the BC *Water Act* and must be constructed by a qualified well driller

Accreditation and Certification of the Technology

The Canadian Geo-exchange Coalition has an accreditation and certification program called the “CGC Global Quality Geo-exchange Program”. CGC ranges from training, to accreditation of an individual, company qualification, and certification of systems. To be accredited there is both the required training and have positive field experience confirmed by customers and manufacturers/distributors recommendations.

‘Certification of systems’ means the system has been designed by an accredited designer, installed by an accredited installer, and any borehole work has involved an accredited vertical loop installer. The system must also meet CSA standard C-448-02, use ISO/CSA approved equipment, and engage such best practices as providing ‘as-builts’, and proper labelling of all pipes and valves.

By meeting the standards established the installation would include meeting Department of Fisheries and Oceans (DFO) guidelines. DFO, typically, does not play a direct role in the approvals of these systems.

The Industry Training Authority (ITA) also provides a Domestic/Residential Certified Geothermal Technician program, which takes approximately 2 years to complete. The International Ground Source Heat Pump Association (IGSHPA) based in the US also provides training to be a ‘Certified Geo-exchange Designer’ (CGD). In addition to taking the required courses and passing an exam, to be eligible for certification one must be:

- An engineer or architect with 3 years of experience in commercial geothermal heat pump, or heating, ventilation and air conditioning (HVAC) experience
- Have a four year non-technical degree with 5 years of experience
- Have a two –year technical degree with 8 years of experience
- Have 10 or more years of experience

KEY ISSUES:

Potential Impacts

This technology is relatively new, but is becoming more popular as residents and businesses look for alternative heating and cooling systems that are less reliant on conventional methods with a desire to be more environmentally responsible.

There are a number of considerations in contemplating changes to regulations to permit ocean loop geo-exchange systems on the foreshore:

1. Use of geo-exchange systems results in reduced Greenhouse Gas (GHG) emissions, particularly as the ocean-based systems are often installed in conjunction with new construction of larger waterfront homes which would otherwise have significant conventional heating and/or cooling requirements. In addition, as passive systems they provide greater local resilience in the sense that owners are not dependant on off-island fuel sources (e.g. propane, oil). From the homeowners’ perspective, they can also provide cost savings over the long term, although usually require additional upfront costs.
2. Although the amount of work on the foreshore is usually minimal, disturbance of sensitive areas such as eelgrass beds or other habitat may be a concern. The Islands Trust has been improving its mapping of the foreshore areas and therefore disturbances become less likely. Guidelines established by DFO also have to be followed. Some islands have DPAs along the foreshore offering another level of protection.
3. Similarly, work required to bury lines immediately upland or in the intertidal area could also result in alteration of existing shorelines or use of materials such as concrete.

Installing systems in conjunction with existing or proposed docks would minimize these impacts.

4. On-going maintenance and concerns over leaks is an issue: the systems are complex and require regular inspection and maintenance by qualified professionals. The type of heat transfer fluid used is also sometimes raised as a concern. Some new systems use water only, as in the system recently approved on North Pender, or use an anti-freeze within the closed loop. The propylene glycol type of fluid sometimes used in these systems is the same as that used as moisturizer in medicines, cosmetics, food, toothpaste and mouthwash and has low toxicity, is highly soluble in water, and readily metabolized by microbes and marine life¹. Higher levels of toxicity have been found from propylene-based Airplane De-icing Fluids (ADF) as a result of additives used in those applications only.
5. Concerns over damage to systems by wave or tides. This is a concern. Proper instalment by a certified installer following established guidelines and procedures. There may be some areas (e.g. narrow channels) where it is impractical to lay a system on the ocean floor due to the flow and tide action.

Potential Benefits:

There is a great deal of research literature that explains the many benefits (e.g. cost, GHG reductions, flexibility, air quality, availability of grants, efficiency, environmentally responsible, etc.) of utilizing these types of systems instead of the conventional methods. If more buildings utilized this type of heating/cooling system the island's electrical system/supply could service a greater number of buildings without requiring costly upgrades. Also, there would be less propane, oil and wood deliveries required, which would reduce wear-and-tear on the road infrastructure. Fewer fuel delivery trucks also reduce transportation GHG emissions, noise and traffic. Two of the most common benefits are listed here:

1. Increased Efficiency and Cost Savings: It is stated through several sources (e.g. www.geoexchange.com , www.earthpointenergy.com , www.geo-exchange.ca) that with these systems two thirds of the energy supplied is from the solar energy stored in the earth/water and 1/3 of the energy is used for servicing the system generally the circulating pump. A large cost of energy supplied to residences is the expense of getting it there – electrical transmission lines, gas lines, oil pipelines, trucks, ferries. These have both direct and indirect costs associated with them. These costs are significantly reduced if not eliminated when using a geo-exchange system. This results in a 25%-50% lower utility bills than conventional systems.

The geo-exchange system used in the North Pender house is a type of water-source heat pump system. It was pointed out in the North Pender example by the engineer (Weir Design and Engineering) the efficiency of these systems as follows:

Heating Efficiency:

The efficiency of a heating system can be defined as the ratio of heat output to energy input. There are many types of heating systems that utilize different equipment with different energy sources. The following is a list of heating systems commonly used in residential applications and their estimated efficiency:

- Wood fireplace - 30 to 50%
- Oil furnace or boiler - 65 to 85%
- Natural gas furnace or boiler - 80 to 95%

¹ Canadian Council of Ministers of the Environment, 2007. Canadian Soil Quality Guidelines for Propylene Glycol: Environmental and Human Health. www.ccme.ca/assets/pdf/1394_pg_rationale_e.pdf
US Environmental Protection Agency Office of Pesticide Programs. Reregistration Eligibility Decision for Polypropylene Glycol. www.epa.gov/oppsrrd1/REDs/propylene_glycol_red.pdf

Propane furnace or boiler - 80 to 95%
Electric heaters or furnace - 100%
Air-source heat pump - 200 to 300%
Water-source heat pump - 300 to 400%

Cooling Efficiency:

This geo-exchange system (used in North Pender) has been designed with “free cooling” where by all cooling will be provided without the use of the heat pumps (the heat pumps only operate when heating is required). This is possible due to the temperature of the ocean during the summer, which sufficiently cools the heat transfer fluid without the use of heat pumps.

Similar to above, the efficiency of a cooling system (air conditioning system) can be defined as the ratio of cooling output to energy input. Cooling efficiency is typically not expressed as a percentage but rather in the form of an Energy Efficiency Ratio (EER). However, for the purpose of comparison within the context of this discussion, the estimated EER for some common residential cooling systems have been converted to percentage:

Air-source heat pump / air conditioner - 300 to 400%
Water-source heat pump (without free cooling) - 400 to 500%
Water-source heat pump (with free cooling) - 3000% or greater

2. Reduced CO2 Emissions: According to data supplied by the Natural resources Canada, a typical residential geo-exchange system produces an average of about one pound less CO2 per hour of use than a conventional system. To put it into perspective if just 100,000 homes converted to geo-exchange, Canada would reduce its CO2 emissions by 880,000,000 pounds.

Another example is for every 2.5 hours of use, a geo-exchange system produces one kilogram less CO2 than a conventional HVAC (heating, ventilation, and air conditioning) system.

RELEVANT POLICY:

Trust Policy Statement: Relevant Directive policies include:

- 3.1.3 - the identification and protection of the environmentally sensitive areas and significant natural sites, features and landforms in their planning area
- 3.1.5 – address the regulation of land use and development to restrict emissions to land, air and water to levels not harmful to humans or other species
- 3.4.4 - the protection of sensitive coastal areas
- 3.4.5 – the planning for and regulation of development in coastal regions to protect natural coastal processes
- 4.5.10 – the location of buildings and structures so as to protect public access to, from and along the marine shoreline and minimize impacts on sensitive coastal environments
- 5.1.3 – the protection of views, scenic areas and distinctive features contributing to the overall visual quality and scenic values of the Trust Area

OCP Policy: policies within the OCPs could be updated as part of the basis of the GHG reduction policies if not already accommodated through general wording in these sections. In addition some OCPs specifically mention using a DPA to manage energy conservation in commercial development. Designation of a DPA to regulate installation of the system could be considered both on the grounds of protection of the natural environment and energy conservation and therefore could be made applicable in a shoreline or foreshore DPA. By requiring a DP it would ensure safe and appropriate installation. As an example, the North Pender OCP contains a requirement that an environmental report be submitted to indicate that there is no impact to the foreshore.

Local Government (Green Communities) Statutes Amendment Act (Bill 27, 2008), which amended the Local Government Act, introduced changes that enable local governments to address climate action in their communities. Among the changes is a requirement for local governments to have targets, policies and actions to reduce GHG emissions. Therefore all OCPs must contain these targets and policies for GHG emission reduction. The Bill 27 also allows for development permit areas that promote energy and water conservation, and reduce greenhouse gases at the single family dwelling level.

Zoning options: amending zoning bylaws to permit ocean loop geo-exchange systems as a permitted use in one or more of the current marine zones or as some islands have permitted in all zones would be required. This would vary depending on the zoning. A recent amendment to the zoning on a site-specific basis in the North Pender LUB provided for both the use and a definition. This use and definition, with relevant modifications, would provide a good basis for a suitable amendment to a zoning bylaw. Currently, zoning is the main tool for regulating use.

Building Inspection: for those islands that have building inspection, ocean loop geo-exchange systems are not subject to building inspection. However, building inspection does currently require that an engineer certify the HVAC system where an ocean loop geo-exchange system provides heating and cooling.

Crown tenure: ocean loop geo-exchange systems are required to obtain approval from the province for tenure over the foreshore. The applications are referred to the Islands Trust for review of zoning compliance.

Climate Change Adaptation and Mitigation: use of renewable or other energy sources that are an alternative to fossil fuels is a recognized mitigation strategy. Ocean loop geo-exchange systems could, depending upon the type of conventional heating and size of the dwelling, provide significant emission reductions. See the previous discussion on potential benefits and CO2 reductions.

CURRENT LOCAL TRUST AREA IMPLEMENTATION

Island Updates

Eight of the 13 Islands Trust Islands have begun or completed implementing changes to their land use bylaws to accommodate the use of ocean loop geo-exchange systems.

Mayne Island: Supports ocean loop geo-exchange through its OCP Policy dealing with Climate Change (4.7.9) which states: *“The LTC should consider amending zoning regulations to permit or facilitate small scale renewable energy production, such as solar collectors, wind turbines and geothermal heating.”* The LUB permits ocean loop geothermal in all zones except the W1 zone.

North Pender Island: Has permitted a site specific rezoning for a water based ocean loop geo-exchange.

South Pender Island: Is considering permitting ocean loop geo-exchange in all zones. They are holding a CIM to discuss this and other land use bylaw amendments in February.

Saturna Island: The LTC has given reading to a bylaw that would amend the Land Use Bylaw to include a definition of ocean loop geo-exchange systems and to add ocean loop geo-exchange systems as a permitted use in the marine zones. It is scheduled for a public hearing in February.

Galiano Island: Staff have been directed to draft an OCP amendment to alter the existing DPA (Shoreline and Marine DPA) to provide for guidelines for ocean loop geo-exchange. As a complement staff have also been requested to review the zoning bylaw to permit the ocean loop geo-exchange structures within the Marine zones and the setback to the sea for private residential use.

Thetis Island: In June 2012, the APC was directed to consider a couple of options to add to the work program a review of OCP policies and LUB regulations and in the meantime that any requests for ocean loop geo-exchange be dealt with as a rezoning. Subsequently, the Thetis LTC has dropped this issue and it appears it may have been application driven and no application has been made.

Ballenas-Winchelseas: The draft OCP contains the wording to permit the use of geo-exchange for individual dwellings. Within the proposed Shoreline Development Permit Area there are guidelines for the installation of ocean loop geo-exchange systems:

Ocean-loop geo-exchange systems will only be considered if they are closed-loop systems using only freshwater as the circulating heat transfer fluid; if they meet or exceed the Canadian CSA design standards CAN/CSA-448-02; and if they are designed and installed by a Registered System Designer.

The draft LUB permits an ocean loop geo-exchange within the Residential zone and the Marine General zones and contains the definition:

"Ocean-loop geo-exchange" means a renewable geothermal heat exchange system that utilizes the naturally occurring temperature of the ocean for heating and cooling that:

- a. is a closed-loop system using only freshwater as the circulating heat transfer fluid,*
- b. meets or exceeds the Canadian CSA design standards CAN/CSA-448-02, as amended from time to time, and*
- c. is designed and installed by a Registered System Designer accredited by the Canadian Geo-exchange Coalition, or the International Ground Source Heat Pump Association.*

Salt Spring Island: In the LUB's Shoreline Zones geothermal heating equipment is permitted in tidal water only.

SUMMARY

Currently, eight (8) of the 13 Local Trust Committees either have regulations and policies or have them proposed to permit ocean loop geo-exchange systems. The proposals by the LTCs to accommodate geo-exchange loops are considered for the main islands and not for their associated islands currently. The approach enacted or proposed is varied and tailored to meet the needs for the Island or as a result of a specific application or the desire of the LTC to be proactive in anticipating the need. Most contain policies that permit the geo-exchange systems either in general in the OCP (GHG policies) or through specific DPA guidelines. Complementary to that would be changes to the LUB to permit the use within specific zones and to define the use.

In addressing their implementation, the two primary concerns are to ensure that the systems are installed professionally by a certified installer and that any impacts on sensitive shoreline or foreshore ecosystems are addressed.

Building Inspection has the authority to establish standards for installation of the systems and to carry out inspections or obtain certifications, but most have not included these systems in the scope of their building bylaws. This could change, as some jurisdictions are becoming involved in permitting and inspecting land based systems. Conventionally, Fisheries and Oceans Canada has reviewed all foreshore applications for impacts on habitat however, changes to staffing and to the legislation seem to be reducing that agency's role and ability to respond to referrals. They have established guidelines which all installers are to follow.

The use of a clear and specific definition for the use can address some of the concerns that the systems meet specified standards for example using fresh water within the closed loop system as is stated in the North Pender bylaw. Impacts on habitat could be addressed through the designation of a DPA; however, it would have to be general in many areas as there is not

currently mapping available that identifies sensitive shoreline and foreshore features such as eelgrass beds, although such mapping should be available in the future.

There are three basic ways for a Local Trust Committee to address the ability of residents to utilize this new technology:

1. Site specific rezoning (e.g. North Pender)
2. Permit their use but regulate (e.g. OCP through DPs)
3. Permit their use outright (e.g. Saturna, Salt Spring Island, Mayne)

DESIRED OUTCOME:

It is recommended that an Islands Trust model bylaw or policy not be established. Eight of the 13 Local Trust Committees already have amended bylaws or are contemplating regulations or policies related to ocean loop geo-exchange systems. Each LTC has a unique set of bylaws to which model provisions may or may not be applicable. For instance, some may not have DPAs currently and may want to address this issue through other forms regulation. Some may want to deal with amendments on a site specific basis thereby not contemplate any new regulations or policies. The current approach by LTCs appears to be working well based on demand and the desire of LTCs to add it to their work programs as a proactive measure. There are a range of options already developed at the LTC level and which are summarized in this report. It is recommended that this report be circulated to ensure that all LTCs and planners are aware of the issues and the options that are being used to address the potential use of these systems by a number of LTCs.

RESPONSE OPTIONS

Recommended:

That the Local Planning Committee circulate this report, *Renewable Energy Technologies in the Trust Area - Ocean Loop Geo-Exchange Systems*, dated January 31, 2013, to all Local Trust Committees and planning staff so that they are aware of the implementation options for ocean loop geo-exchange systems and their status in other Local Trust Areas

Alternative:

That the Local Planning Committee receive the report as information and take no further action.

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February 1, 2013

Linda Adams, Chief Administrative Officer